

Incubator 8000 IC / SC / NC

Electrical Safety Test in the USA and Canada according to UL2601-1 / Table 19.100 and Table IV

1 Visual inspection of basic unit

- Compare fuses to stated ratings on the backside of the Incubator next to the inlet of the power cord.
- Compare fuses to stated ratings on the backside of the Caleo next to the inlet of the power cord.

2 Safety testing Caleo with DNI Nevada Model μ -Test 2000

- **Warning:** These tests can expose personnel to hazardous electric shock and must be carried out with caution.
- **Note:** Do not plug the μ -Test 2000 safety analyzer power cord into a line isolation monitor as inaccurate readings may occur.
- Ensure that the switch "TEST LOAD" on the backside of the μ -Test 2000 is in the "IEC 601-1" position.
- Plug the μ -Test 2000 power cord into a live AC receptacle, place the power switch of the μ -Test 2000 to the "1" or ON position and ensure that the switches marked "NEUTRAL" and "POLARITY" are in the OFF or CLOSED position.

2.1 Chassis Resistance Testing

- Rotate "MODE" knob to "OHM RESISTANCE" position.
- Attach test lead to "CHASSIS CABLE" input of the tester.
- Plug the Caleo power cord into the test receptacle of the μ -Test 2000.
- Perform 5 tests with the probe attached to the following test items of the Caleo:

- a) Pole, short
 - b) Pole, long (option)
 - c) Rail for accessories next to mains input
 - d) Air heating
 - e) Ground stud at the mains voltage distributor
- The resistance reading then shown on the μ -Test 2000 is the "Chassis Resistance". Bend and exercise the power cord to check for intermittent reading.

- Maximum allowable test values:

Chassis Resistance	0.2 Ohm
--------------------	---------

- Afterwards leave alligator clip at the potential ground stud.

2.2 Enclosure Leakage Current (Chassis Leakage Testing)

- Rotate "MODE" knob to "CHASSIS" position.
- Switch on Caleo and allow the unit to complete the self-test.
- Switch on humidity module (if option is installed).
- Set air temperature and humidity higher than measured values.
- Set up the μ -Test 2000 for the following tests by using the switches labeled "Ground" and "Polarity".
- This is a measurement of the leakage current from the Chassis to earth ground.
- Be sure to pause the "POLARITY" switch in the center-off position before changing polarity.
- Maximum allowable test values under Normal Condition:

Normal Ground, Normal Polarity, Closed Neutral:	100 μ A
Normal Ground, Reverse Polarity, Closed Neutral:	100 μ A

- Maximum allowable test values under Single Fault Condition:

Open Ground, Normal Polarity, Closed Neutral:	300 μ A, but not 0 μ A
Open Ground, Reverse Polarity, Closed Neutral:	300 μ A, but not 0 μ A

2.3 Earth Leakage Current (Ground Wire Leakage Testing)

- Remove the red lead with the alligator clip from the Caleo.
- Leave all other selections from the previous test the same.
- The Caleo is still switched on.
- Set up the μ -Test 2000 for the following tests by using the switches labeled "Neutral" and "Polarity".
- Important: Do not press "OPEN GROUND" pushbutton.
- This is a measurement of the leakage current flowing through the ground wire of the power cord.
- Be sure to pause the "POLARITY" switch in the center-off position before changing polarity.
- Maximum allowable test values under Normal Condition:

(Open Ground), Normal Polarity, Closed Neutral:	300 μ A, but not 0 μ A
(Open Ground), Reverse Polarity, Closed Neutral:	300 μ A, but not 0 μ A

- Maximum allowable test values under Single Fault Condition:

(Open Ground), Normal Polarity, Open Neutral:	300 μ A
(Open Ground), Reverse Polarity, Open Neutral:	300 μ A

- Switch off Caleo.

2.4 Patient leakage current from the skin temperature connection to earth

- Remove the test lead from the μ -Test 2000 and leave all other selections from the previous test the same.

- Short all pins of the two skin temperature connectors using a shorting plug 79 10 484. Plug the other end into the input jack "RL" of the μ -Test 2000.
- Rotate "MODE" knob to "LEAD TO GND" position.
- Rotate "LEAD" knob to "RL" position.
- Set up the μ -Test 2000 for the following tests by using the switches labeled "Ground", "Neutral" and "Polarity".
- Switch on Caleo and allow the unit to complete the self-test.
- Switch on humidity module (if option is installed).
- Set air temperature and humidity higher than measured values.
- Be sure to pause the "POLARITY" switch in the center-off position before changing polarity.
- Maximum allowable test values under Normal Condition:

Normal Ground, Normal Polarity, Closed Neutral:	100 μ A
Normal Ground, Reverse Polarity, Closed Neural:	100 μ A

- Maximum allowable test values under Single Fault Condition:

Open Ground, Normal Polarity, Closed Neutral:	500 μ A
Open Ground, Reverse Polarity, Closed Neural:	500 μ A

- Switch off Caleo and disconnect power cord from the μ -Test 2000 and remove the test equipment